

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/000329

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: **F16K 15/14, A63B 41/00, B60C 29/00**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI: IPC F16K 15/14, 15/16, 15/20, 35/04 A63B 41/00, B60C 29/00 and VALVE, DUCK, COLLAPSE, CHECK, CONICAL, SLIT and the like

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 327 912 A (HOFFMAN) 4 May 1982 Whole document	1, 2, 7, 26, 27
X	US 4 240 630 A (HOFFMAN) 23 December 1980 Whole document	1, 2, 7, 26, 27
X	US 2 830 610 A (CHUPA) 15 April 1958 Whole document	1, 2, 7, 26, 27
X	GB 426 786 B (BENSON) 10 April 1935 Whole document	1, 2, 7, 26, 27
X	US 3 861 416 A (WICHTERLE) 21 January 1975 Whole document	4 - 15
X	US 2 644 663 A (KLINGLER) 7 July 1953 Whole document	4 - 15

☒ Further documents are listed in the continuation of Box C ☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
27 May 2004

Date of mailing of the international search report

- 4 JUN 2004

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/000329

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 274 447 A (KENNISH) 20 March 1883 Whole document	23 - 31
X	US 3 822 720 A (SOUZA) 9 July 1974 Whole document	23 - 31
X	GB 2 094 443 A (BLACK AND DECKER) 15 September 1982 Whole document	23 - 31

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/000329

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 3

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

Claim 3 defines that the collapsible aperture of the valve element is configured to open on application of a predetermined axial force to the mounting member, however it is dependent upon Claim 1 which defines that the collapsible aperture is opened by the fluid pressure alone.

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

SEE EXTRA SHEET

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/000329

Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: III

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1. It is considered that the feature of the valve element including a collapsible aperture which is opened by fluid pressure alone comprises a first "special technical feature".
2. Claims 8. It is considered that the valve element being connected to the mounting member via an isolation zone that reduces likelihood of the collapsible aperture moving to the open condition under impact comprises a second special technical feature.
3. Claim 23. It is considered that the valve element being configured to provide opening of the collapsible aperture on application of a predetermined force to the mounting member comprises a third special technical feature.

Since the above-mentioned groups of claims do not share any of the technical features identified, a "technical relationship" between the inventions, as defined in PCT rule 13.2 does not exist. Accordingly the international application does not relate to one invention or to a single inventive concept, a priori.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2004/000329

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member		
US	4327912	CA 1196353	DE 3149765	FR 2496469	
		GB 2089664	JP 54139123	JP 57173072	
		JP 62281978	US 4240630	ZA 8108287	
US	3861416	DE 2304274	FR 2170044	GB 1372835	
		JP 49110194			
US	2644663	NONE			
US	2830610	NONE			
GB	426786	NONE			
US	274447	NONE			
GB	2094443	NONE			
US	3822720	NONE			
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001...					
END OF ANNEX					